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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,500	03/16/2004	Kaichang Li	245-67929-01	3653
24197	7590	04/12/2005	EXAMINER	
KLARQUIST SPARKMAN, LLP			RAJGURU, UMAKANT K	
121 SW SALMON STREET			ART UNIT	
SUITE 1600			PAPER NUMBER	
PORTLAND, OR 97204			1711	

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,500

Applicant(s)

LI ET AL.

Examiner

Umakant K. Rajguru

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 13-18, 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. A response (to restriction requirement) has been filed on December 13, 2004.
2. Claims 1-12 and 19-30 have been elected for examination.
3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are vague in reciting "substantially formaldehyde-free" because it is not known precisely what is encompassed by the scope of these claims. Are they 90% , 95% or 99.9% free of formaldehyde?

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-12 and 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US 2004/0089418) in view of Lloyd et al (US 6368529) and Sugino et al (US 6277481) or Bloch et al (US 6124032).

Li describes formaldehyde- free lignocellulosic adhesives. The composition of adhesive comprises a reaction product of (i) lignin and (ii) a substantially formaldehyde free curing agent like an amine or imine (abstract). Lignin may comprise an industrial lignin preparation [0016]. Adhesive composition is substantially free of formaldehyde [0032].

Li does not mention a boron compound.

Lloyd discloses lignocellulosic composite which contains calcium borate at 0.1 to 4.0% by wt (abstract, col. 10, lines 25-32).

Sugino discloses adhesive composition containing an organic polyimine compound.

Bloch also discloses the use of polyimine in an adhesive (col. 3, lines 40-42).

Therefore it would have been obvious to include in the adhesive of Li (a) boron compound to impart resistance to fungi and insects and (b) polyimine to regulate as well as enhance adhesive strength together with cohesive strength.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US 2004/0089418) in view of Lloyd et al (US 6368529) and Sugino et al (US 6277481) or

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Bloch et al (US 6124032) as applied to claim 1 above, and further in view of Schroeder (US 5026808).

Combination of Li, Lloyd and Sugino or Bloch does not mention demethylated lignin of instant claim 27.

Schroeder discloses method of using lignin in adhesive resins by extracting demethylated lignin.

It would have been obvious to use in the adhesive of Li, the demethylated lignin *WKL* (of Schroeder) since the demethylated lignin is more reactive than normal resin and therefore it is expected to produce a stronger adhesive.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to U. K. Rajguru whose telephone number is (571) 272-1077. The examiner can normally be reached on Monday-Friday from 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



U. K. Rajguru/af
March 22, 2005



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1706